

sitidæ, occur in species of the genus *Porites* itself. Thus, I find them to be well developed in *Porites clavaria*, Lam., and to be even more numerous developed in *Porites astræoides*, Lam. I annex a sketch of a thin longitudinal section of some of the corallites of *Porites clavaria*, to show the tabulæ (fig. 2). As I purpose, however, to return to this subject at greater length, I shall say nothing further about it here, merely adding that a comparison between the accompanying section of *Porites clavaria*, Lam., and a corresponding section of such a species of *Favosites* as *F. hemisphærica*, Yand. & Shum., will show how striking is the structural agreement between the two.

Finally, as regards the existence of septa, Mr. Hickson has described in *Tubipora* certain septiform structures which he finds occasionally to unite the axial tube to the theca; and he also mentions that "occasionally individual spicules will project out radially into the cavity of the corallite in a manner exactly similar to the so-called 'septæ' of *Syringopora*." I regret that I cannot accept either of these structures (both of which I have seen) as being at all of the nature of true septal spines, or as being in any way properly comparable with the vertically arranged spiniform septa of *Syringopora*. The septal spines of *Syringopora* are, on the other hand, properly comparable, in my opinion, with the septal spines of such Zoantharians as *Porites* and *Alveopora*.

I need hardly add, finally, that I find myself compelled to dissent entirely from Mr. Hickson's conclusion, that "the evidence at our command tends to prove that the Favositidæ are really Alcyonarians, and that *Syringopora* is also an Alcyonarian allied to *Tubipora*." On the contrary, I think the evidence at our command is sufficient to prove that the Favositidæ are Zoantharians closely allied to the Poritidæ, and that *Syringopora*, instead of being an Alcyonarian and allied to *Tubipora*, is a Zoantharian and allied to *Favosites*. On this last point I hope shortly to publish some interesting additional evidence that I have recently obtained.

III.—On the *Mantis metallica* of Westwood.

By J. WOOD-MASON.

THE beautiful species of the Orthopterous family Mantodea, which was described and figured nearly forty years ago by Prof. Westwood in his 'Arcana Entomologica,' under the name of *Mantis metallica*, would appear still to be unique, or at

any rate very rare, in European collections, no specimens of it having been seen either by De Saussure or by Stål, the latter of whom makes not the slightest allusion to it in his 'Systema Mantodeorum,' while the former is able to do no more than place it next after his *Odontomantis javana*, one of the two species to which it turns out to be most nearly affined.

A second specimen has at last been obtained in the district adjoining that from which the first was received. It was captured in September 1881, on Nemotha, a peak of the North Cachar hills, which rises to the height of 3336 feet, by my native collector, by whom it was forwarded alive to Silchar, where I happened at the time to be stationed.

The species belongs to the subfamily Harpagidæ of Stål's system, and is very closely allied to *Odontomantis javana*, Saussure, and to *Antissa pulchra*, Fabr. It differs from the former, but not from the latter, in the discoidal vein of the wings being branched; from the latter, but not from the former, in the transverse ridge of the clypeus being angulated; and from both of these species in its greater robustness, in its more firmly chitinized integument, and especially in the form of the prothorax; on which last account I propose for its reception a new subgenus, which may be thus named and characterized:—

NEMOTHA, subgen. nov.

Pronotum robust and tolerably broad, strongly constricted posteriorly; the portion of it in front of the constriction oval; the disk of its posterior lobe slightly inflated on each side of the median ridge at the anterior end. *Clypeus* transversely elevated into a strongly angulated ridge. *Frontal shield* obtuse-angular at base, with the angle but slightly projecting; its disk furnished with two short and widely separated ridges. *Discoidal vein* of the wings branched.

Nemotha metallica.

Mantis metallica, Westwood, Arcana Entomol. ii. p. 54, pl. 62. fig. 3, ♀.

♀. Head, legs, margins of the pronotum as far back as the constriction and a band running from the margins across the supracoxal groove, and the under surface shining black, with blue reflections like the blue-black paper used to cover pill-boxes, with all the articular membranes, two streaks on each eye, the middle two fourths of the first joint of the fore tarsi (this paler and greenish), a thick bracket-shaped mark at the posterior end of the second, third, fourth, fifth, and sixth abdominal sterna, all the soft and membranous

parts of the thoracic sterna, and a short streak on the extremity of the dorsal crest of the four posterior femora pale turquoise-blue; head between juxtocular bosses from vertex-line to ocelli, and the disk of both lobes of the pronotum yellow, of the shade of autumn leaves; tegmina yellow-green, clouded with reddish fuscous, and narrowly edged in front with jet-black, their anal area red at the very base, beyond which the veins are red and the meshes smoky; wings with base and anterior area rather opaque, red, passing into yellow at extremity, as to the rest black-smoky with purple reflections; abdomen above dark steel-blue, tipped with yellow.

Head thicker than in *A. pulchra*; forehead marked by five longitudinal grooves; facial shield a little longer, its obtuse-angled basal margin projecting very slightly in the middle line, its disk furnished on each side with a transversely elongated tubercle, representing the ridges present in *A. pulchra*; clypeus transversely elevated into a prominent angulated ridge, from the middle of which a strong longitudinal ridge runs forward to the anterior margin of the part; labrum convex.

Pronotum robust, only about twice as long as broad, traversed along the middle from about the commencement of the posterior fourth of the anterior up to the pair of smooth elevations near the hinder end of the posterior lobe by a coarse ridge; strongly constricted posteriorly; the portion of it lying in front of the constriction having an oval outline, which is slightly broken on each side antero-laterally by a faint flattening or oblique truncation of the edge; the prominent heart-shaped disk of its anterior lobe having two conspicuous oval wrinkled elevations, placed obliquely on each side of the posterior end; its posterior lobe having the muscular impressions at the anterior end large and deep, and the part of the disk between these impressions and the constriction somewhat inflated on each side, so that the groove in which, in the allied species, the ridge is throughout lodged is, in this part of its length, effaced; its finely-denticulate lateral margins a little lamellar.

Organs of flight extending by about one sixth of their length beyond the apex of the abdomen, of the same structure and texture as in *A. pulchra*; the discoidal vein of the wings 3-branched, with one of the branches on one side bifurcate.

Legs longer and slenderer.

Abdomen oval, about $1\frac{1}{2}$ times as long as broad.

Total length of body 28 millim.; length of pronotum 8, breadth of pronotum at dilatation 4.5; length of abdomen 12,

breadth of abdomen 8 ; length of tegmina 22, breadth of tegmina 6 ; breadth of marginal field 1·5.

The above description was drawn up from the living insect.

Hab. Sylhet and North Cachar hills, Assam.

The specimen has since been compared with the mutilated type in the Oxford Museum by Professor Westwood and myself, and found to agree perfectly therewith. The discrepancy between Westwood's figure and the above description as to the structure of the discoidal vein of the wings is explained by the bad state of preservation of the typical specimen.

IV.—Notes on the Genus *Gyracanthus*, Agassiz.

By Dr. R. H. TRAQUAIR, F.R.S.*

1. *Did Gyracanthus possess dorsal spines?*

Although Agassiz himself pointed out that the spines of *Gyracanthus* were not bilaterally symmetrical, inasmuch as one side was more rounded than the other, he nevertheless regarded them as dorsal, and so did people in general, until in 1863 Messrs. Kirkby and Atthey pointed out the probable pectoral nature of some at least of these appendages, the grounds for this conclusion being the conspicuous lateral curvature shown by such specimens, along with the wearing away of the apices, as if they had been subject to habitual attrition at the bottom of the water in which their possessors lived. In 1868 Messrs. Hancock and Atthey returned to the subject †, and, reviewing the extensive series of specimens in the collection of the last-named gentleman, divided them into two categories—first, those with lateral curvature and worn apices, and second, those in which apparently there was

* Read before the Royal Physical Society of Edinburgh, December 19, 1883.

† Ann. & Mag. Nat. Hist. (4) 1868, vol. i. p. 368. In a footnote Messrs. Hancock and Atthey refer to a paper by Messrs. Atthey and Kirkby, entitled "Fish-remains in the Coal-measures of Durham and Northumberland," as having been read before the British Association at Newcastle in 1863, and as containing the first suggestion of the paired nature of these spines. I cannot find this paper in the British Association's 'Proceedings' for that year; and although a paper of the same title is found in the 'Proceedings of the Tyneside Naturalists' Field Club,' it contains no reference to *Gyracanthus*. These original remarks would therefore seem not to have been published.